

PATENT / DOCKET NO. 10287.39
Customer No.: 000027683

In the Claims:

The following claims 1-6, 8-23, 25-27, 29-31 and 33 are amended, as indicated in the marked up version included with this response as Attachment A.

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1. (Amended) A labeled complex comprising, a carrier, a large number of target receptors bonded with said carrier, and labeled substances bonded with each target receptor, wherein said carrier and said labeled substances are bonded at different locations on said target receptors and wherein each said target receptor is adapted to hold at least one type of target, and predetermined types of labeled substances are present at predetermined molar ratios.
 2. (Amended) A labeled complex according to claim 1, wherein all of said labeled substances are distributed to substantially all of said target receptors bonded with a carrier, and each said target receptor is bonded with one type of labeled substance.
 3. (Amended) A labeled complex according to either one of claim 1 and claim 2, wherein each said target receptor, which is bonded with the carrier on a part thereof, and bonded with the labeled substance on the other part thereof, is formed in a slender shape selected from the group consisting of a line, a thread, a hair, or a stick.
 4. (Amended) A labeled complex according to any one of claim 1 through claim 3, wherein said target receptors comprise chemical compounds which contain biopolymers selected from the group consisting of nucleic acids, peptides, proteins, polysaccharides and lipids, or living beings selected from the group consisting of viruses, bacteria or a part thereof, or substances which are adapted to hold them.
 5. (Amended) A labeled complex according to any one of claim 1 through claim 4, wherein said target receptors comprise nucleic acids having a predetermined double strand base sequence

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comprising a first single strand and a second single strand, said labeled substance is bonded with said first single strand at one location, and said carrier is bonded with said second single strand at another location.

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6. (Amended) A labeled complex according to any one of claim 1 through claim 4, wherein said target receptor comprises nucleic acids having a predetermined double strand base sequence comprising a first single strand and a second single strand, said labeled substance is bonded at a first location of said first single strand, and said carrier is bonded at a second location of said first single strand.

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8. (Amended) A labeled complex according to any one of claim 1 through claim 6, wherein said labeled substance is selected from the group consisting of a fluorescent substance, a mineral phosphate, a luminescent substance or a chemiluminescent substance.

9. (Amended) A labeled complex according to claim 8, wherein the type of said luminescent substance can be discriminated by a method selected from the group consisting of excitation wavelength, emission wavelength, emission intensity, degree of emission polarization, emission phase or emission lifetime.

10. (Amended) A labeled complex according to claim 9, wherein said carrier is coated with one of a pair of chemical compounds that are specifically bonded, such as avidin, biotin, said target receptor is a DNA fragment having a predetermined base sequence, the other chemical compound of said chemical compound pair is bonded at a first position, and said fluorescent substance is bonded at a second position.

11. (Amended) A labeled complex according to any one of claim 1 through claim 9, wherein said carrier has objects of action at a distance such as magnetic particles, which can be controlled remotely.

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12. (Amended) A process for producing a labeled complex according to any one of claim 1 through claim 11, said process comprising: a step for forming target receptors, which are bonded with labeled substances at one place, and are adapted to hold specific targets, and a step for bonding the target receptors with the carrier.

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13. (Amended) A process for producing a labeled complex according to claim 12, wherein said step for bonding target receptors with said carriers is performed by mixing the carriers with which the target receptors are to be bonded, in a liquid wherein a large number of target receptors which are bonded with labeled substances are suspended wherein all of the labeled substances are of the types and molar ratios that are determined according to the types of the target receptors or the types and the quantity ratios of the target receptors.

14. (Amended) A process for producing a labeled complex according to claim 12, wherein said step for generating the target receptors comprises synthesizing a first single strand nucleic acid that is bonded with a labeled substance, and that has a predetermined base sequence, and synthesizing a second single strand nucleic acid that has a high relation with the base sequence, and that is processed to be capable of being bonded with the carriers, and generating a double strand nucleic acid by annealing the first single strand nucleic acid and the second single strand nucleic acid.

15. (Amended) A process for producing a labeled complex according to claim 12, wherein said step for generating the target receptors comprises using a first primer for reproduction of a first single strand nucleic acid that is bonded with said labeled substances and that has a predetermined base sequence, and a second primer for reproduction of a second single strand nucleic acid to be bonded with said carrier, whereby a double strand nucleic acid is synthesized and amplified.

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16. (Amended) A process for producing a labeled complex according to claim 12, wherein said step for bonding the target receptors with carriers, or the step for generating the target receptors, synthesizes and amplifies double strand nucleic acid by using a first primer for reproduction of a single strand nucleic acid with a predetermined base sequence, which combines with either one of said labeled substance and said carrier, and also provides a restriction enzyme process at the opposite end to the end that is bonded with said labeled substance or a carrier and, via an adapter composed of DNA ligase, bonds a carrier or a labeled substance onto the single strand side to combine the target receptor with the carrier, or generates a target reservoir.
17. (Amended) A process for producing a labeled complex according to claim 16, wherein said step for generating the target receptor comprises removing a single strand that is not bonded with said labeled substance or said carrier by denaturation.
18. (Amended) A process for producing a labeled complex according to claim 16, wherein said step for bonding the target receptor with the carrier bonds said target receptor and said carrier by utilizing physical or chemical bonding selected from the group consisting of attachment, adsorption, adhesion through holes, gaps, or irregularities in the carrier, or a specific interaction of biotin and avidin, to suspend said target receptor and said carrier.
19. (Amended) A process for producing a labeled complex according to claim 16, wherein said step for generating the target receptor comprises generating a plurality of target receptors with which is bonded one of a pair of chemical compounds, one part of which is bonded with the labeled substance, and the other part of which is specifically bonded, and said step for bonding the target receptor with the carrier comprises bonding the target receptor with the carrier by suspending in liquid the carrier on which the other of said pair of chemical compounds is coated, and said target receptor with which the labeled substance is bonded.

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20. (Amended) A process for utilizing a labeled complex comprising: a step for selecting a labeled complex from a group consisting of a large number of a plurality of types of labeled complexes wherein the types or molar ratio of the targets of the labeled complex according to any one of claim 1 through claim 11, and the labeled substances assigned to the targets are different from each other, and a step wherein the selected labeled complex discriminates the labeled target.

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21. (Amended) A process for utilizing a labeled complex according to claim 20, wherein said selection step has a liquid path and magnetic means which is capable of applying magnetization to inside of the liquid path, and is performed for the labeled complex, or the labeled complex and selective substances, using a pipette device for suction and discharge, and by operations selected from the group consisting of: quantification, isolation, apportioning, dispensing, clarity, suspension, agitation, concentration, dilution, mixing, contact, capture, holding, washing, denaturation, incubation, temperature control, extraction, recovery, transport, or combinations thereof.

22. (Twice Amended) A process for utilizing a labeled complex according to claim 20, wherein said selection step comprises; a step for suspending said labeled complex group, a step for contacting the suspension in which the labeled complex group is suspended, and selective substances for selecting the object labeled complexes, and a step for extracting or separating the labeled complexes bonded with the selective substances.

23. (Amended) A process for utilizing a labeled complex according to claim 22, wherein said selection step comprises a step for labeling said selective substances with different types of labeled substances from the labeled substances contained in the labeled complex, and for

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extracting and separating the labeled complex bonded with the selective substances based on the labeled substances.

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25. (Amended) A process for utilizing a labeled complex according to either one of claim 20 and claim 21, wherein with said selection step, said target receptor is a double strand nucleic acid with a predetermined base sequence, and wherein said labeled substance and said carrier are bonded with a first single strand thereof, the second single strand is removed by denaturation, and moreover for said selective substances, nucleic acid having a predetermined base sequence is used.

26. (Amended) A process for utilizing a labeled complex according to either one of claim 20 and claim 21, wherein said selection step comprises a step for contacting stationary phases on which selective substances are fixed, and a liquid wherein the labeled complex group is suspended, and a step for selecting a labeled complex bonded with the selective substances on the stationary phase by removing the suspension by washing.

27. (Amended) A process for utilizing a labeled complex according to claim 26, wherein said selection step comprises a step wherein labeled complexes are eluted physically or chemically from said stationary phases for extraction, and are selected by separation or washing.

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29. (Amended) A process for utilizing a labeled complex according to claim 26, wherein said selection substance is labeled with a labeled substance of one of a pair of chemical compounds that are specifically bonded, and said selection step comprises a step wherein a liquid in which the conjugation of the selective substances and labeled complexes is suspended, is contacted with the stationary phase on which the other of said pair of chemical compounds is fixed, the conjugation is bonded with said stationary phase, the substances other than those bonded with

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the stationary phase are washed to be removed, said target receptor is denatured to be a single strand, and the labeled complex is eluted and selected by extraction, or separation.

B4 30. (Amended) A process for utilizing a labeled complex according to either one of claim 20 and claim 21, wherein said selection step comprises a step for labeling said labeled complex by luminescent substances, for labeling the selective substances by different types of luminescent substances from the labeled substances, and for mixing and contacting the liquid in which the labeled complex group is suspended with the selective substances, and a step for passing suspended liquid of the labeled complex group including labeled complexes bonded with the selective substances through a translucent narrow tube, and said discrimination step comprises a step for receiving light when the suspended liquid of said labeled complex group passes through said narrow tube, and a step wherein, with respect to the labeled complex selected by the measurement of the intensity of light emitted by the selective substance, based on the result of a measurement of the intensity of light emitted by the labeled complex, the types and the molar ratio are computed to discriminate the corresponding target.

31. (Twice Amended) A process for utilizing a labeled complex according to claim 21, wherein when said discrimination substances or selective substances are fluorescent substances or mineral phosphates, in the step for passing said suspended liquid through said narrow tube, an excitation light for exciting the substances is emitted toward said narrow tube.

B5 33. (Twice Amended) A target analyzing apparatus which utilizes a labeled complex according to claim 32, wherein there is further provided irradiating means for externally radiating excitation light toward said narrow tube for, when said discrimination substances or selective substances are fluorescent substances or mineral phosphates, exciting the substances, or providing light for scattering to obtain scattered light from the substances.